CLAIMS

1. A method for forming a threaded rod comprising:

providing a longitudinally continuous fibrous structure formed of a plurality of fibers;

the fibrous structure including longitudinally extending continuous fibers;

impregnating the fibrous structure with a settable resin;

collating the impregnated fibrous structure including the longitudinally extending continuous fibers into an elongate continuous rod in which the resin throughout the rod is an un-set condition;

providing a generally cylindrical die having a plurality of die parts for surrounding a portion of the rod and for extending along a part of the length of the rod, which die parts can be opened in a direction transverse to the length of the rod to receive the rod and clamped together to form a hollow die interior defining a generally cylindrical shape with a continuous helical thread therealong;

in a compression step, closing the die parts into a closed position onto the portion of the length of the impregnated fibrous structure while the resin remains in the un-set condition so as to apply a compressive force from the die parts onto the rod in a direction transverse to the length to cause the portion of the fibrous structure to conform to the shape of the hollow interior and thus to mold on the fibrous structure a helical thread which is substantially continuous along the portion and which has a helical thread root having a minimum diameter at a core of the fibrous and a helical

thread crest having a maximum diameter;

and causing the compressive force within the hollow interior so as to distort some of the longitudinally extending continuous fibers of the portion of the rod such that a portion of the distorted fibers lies inwardly of the root and a portion extends into the thread toward the crest such that the thread is reinforced by the longitudinally extending continuous fibers which extend from the thread into the core;

heating the die parts to set the resin in the portion;

moving the die parts from the closed position to a release position;

with the die parts in the release position, pulling the rod with the resin set therein longitudinally so as to move the portion of the rod with the molded thread thereon longitudinally out of the die and to move a further portion of the rod with the resin in an un-set condition impregnated therein into the die;

and repeating the compression step on the further portion.

2. The method according to Claim 1 wherein there is provided a mandrel inside the die to form a hollow interior of the rod.

3. The method according to Claim 1 wherein there is provided a tubing core inside the rod.

4. The method according to Claim 1 wherein the die parts include a first die part and a second die part, each of the die parts having a part cylindrical surface forming a part of the hollow die interior defining the generally cylindrical shape such that, when the die parts are in closed position, the part cylindrical surfaces are

coaxial to form the hollow die interior; wherein the first die part and the second die part each include parallel mating surfaces on each side of the part cylindrical surface; and wherein the first and second die parts are moved in the compression step from the release position in which the mating surfaces of the first die part are spaced from the mating surfaces of the second die part in a first direction transverse to the mating surfaces to bring the mating surfaces into contact together with the part cylindrical surfaces axially offset and in a second direction parallel to the mating surfaces to bring the part cylindrical surfaces into the closed co-axial position to form the hollow die interior into the generally cylindrical shape.

5. The method according to Claim 4 wherein the mating surfaces of the first and second die parts on one side of the part cylindrical surfaces lie in a first plane which is parallel to and spaced from a second plane containing the mating surfaces of the first and second die parts on an opposed side of the part cylindrical surfaces.

6. The method according to Claim 5 wherein the first and second die parts are moved from the closed position to the release position in a direction which is inclined to a right angle to the mating surfaces.

7. The method according to Claim 5 wherein the first and second die parts are moved from the closed position to the release position in a direction which is substantially at right angles to a plane intersecting edges of the part cylindrical surfaces.

8. The method according to Claim 5 wherein movement of the first and second die parts in the second direction, with the mating surfaces in contact, causes un-set resin to be swept from the mating surfaces into the hollow die interior.

9. The method according to Claim 7 wherein the first and second die parts move from the closed position to the release position and back to the closed position in a generally triangular path.

10. The method according to Claim 1 wherein the die parts include a first die part and a second die part, each of the die parts having a part cylindrical surface forming a part of the hollow die interior defining the generally cylindrical shape such that, when the die parts are in closed position, the part cylindrical surfaces are coaxial to form the hollow die interior; wherein the first die part and the second die part each include parallel mating surfaces on each side of the part cylindrical surface; and wherein the mating surfaces of the first and second die parts on one side of the part cylindrical surfaces lie in a first plane which is parallel to and spaced from a second plane containing the mating surfaces of the first and second die parts on an opposed side of the part cylindrical surfaces.

11. The method according to Claim 10 wherein the first and second die parts are moved from the closed position to the release position in a direction which is inclined to a right angle to the mating surfaces.

12. The method according to Claim 10 wherein the first and second die parts are moved from the closed position to the release position in a direction which is

substantially at right angles to a plane intersecting edges of the part cylindrical surfaces.

13. A method for forming a molded rod comprising:

providing a longitudinally continuous fibrous structure formed of a plurality of fibers;

the fibrous structure including longitudinally extending continuous fibers;

impregnating the fibrous structure with a settable resin;

collating the impregnated fibrous structure including the longitudinally extending continuous fibers into an elongate continuous rod in which the resin throughout the rod is an un-set condition;

providing a generally cylindrical die having a plurality of die parts for surrounding a portion of the rod and for extending along a part of the length of the rod, which die parts can be opened in a direction transverse to the length of the rod to receive the rod and clamped together to form a hollow die interior defining a generally cylindrical shape;

in a compression step, closing the die parts into a closed position onto the portion of the length of the impregnated fibrous structure while the resin remains in the un-set condition so as to apply a compressive force from the die parts onto the rod in a direction transverse to the length to cause the portion of the fibrous structure to conform to the shape of the hollow interior;

heating the die parts to set the resin in the portion;

and moving the die parts from the closed position to a release position;

wherein the die parts include a first die part and a second die part, each of the die parts having a part cylindrical surface forming a part of the hollow die interior defining the generally cylindrical shape such that, when the die parts are in closed position, the part cylindrical surfaces are coaxial to form the hollow die interior;

wherein the first die part and the second die part each include parallel mating surfaces on each side of the part cylindrical surface;

and wherein the first and second die parts are moved in the compression step from the release position in which the mating surfaces of the first die part are spaced from the mating surfaces of the second die part in a first direction transverse to the mating surfaces to bring the mating surfaces into contact together with the part cylindrical surfaces axially offset and in a second direction parallel to the mating surfaces to bring the part cylindrical surfaces into the closed co-axial position to form the hollow die interior into the generally cylindrical shape.

14. The method according to Claim 13 wherein the mating surfaces of the first and second die parts on one side of the part cylindrical surfaces lie in a first plane which is parallel to and spaced from a second plane containing the mating surfaces of the first and second die parts on an opposed side of the part cylindrical surfaces.

15. The method according to Claim 14 wherein the first and second die parts are moved from the closed position to the release position in a direction which is

inclined to a right angle to the mating surfaces.

16. The method according to Claim 14 wherein the first and second die parts are moved from the closed position to the release position in a direction which is substantially at right angles to a plane intersecting edges of the part cylindrical surfaces.

17. The method according to Claim 14 wherein movement of the first and second die parts in the second direction, with the mating surfaces in contact, causes un-set resin to be swept from the mating surfaces into the hollow die interior.

18. The method according to Claim 16 wherein the first and second die parts move from the closed position to the release position and back to the closed position in a generally triangular path.

~~19.~~ A method for forming a molded rod comprising:

providing a longitudinally continuous fibrous structure formed of a plurality of fibers;

the fibrous structure including longitudinally extending continuous fibers;

impregnating the fibrous structure with a settable resin;

collating the impregnated fibrous structure including the longitudinally extending continuous fibers into an elongate continuous rod in which the resin throughout the rod is an un-set condition;

providing a generally cylindrical die having a plurality of die parts for surrounding a portion of the rod and for extending along a part of the length of the rod,

which die parts can be opened in a direction transverse to the length of the rod to receive the rod and clamped together to form a hollow die interior defining a generally cylindrical shape;

in a compression step, closing the die parts into a closed position onto the portion of the length of the impregnated fibrous structure while the resin remains in the un-set condition so as to apply a compressive force from the die parts onto the rod in a direction transverse to the length to cause the portion of the fibrous structure to conform to the shape of the hollow interior;

heating the die parts to set the resin in the portion;

and moving the die parts from the closed position to a release position;

wherein the die parts include a first die part and a second die part, each of the die parts having a part cylindrical surface forming a part of the hollow die interior defining the generally cylindrical shape such that, when the die parts are in closed position, the part cylindrical surfaces are coaxial to form the hollow die interior;

wherein the first die part and the second die part each include parallel mating surfaces on each side of the part cylindrical surface;

and wherein the mating surfaces of the first and second die parts on one side of the part cylindrical surfaces lie in a first plane which is parallel to and spaced from a second plane containing the mating surfaces of the first and second die parts on an opposed side of the part cylindrical surfaces.

20. The method according to Claim 19 wherein the first and second die

parts are moved from the closed position to the release position in a direction which is inclined to a right angle to the mating surfaces.

21. The method according to Claim 19 wherein the first and second die parts are moved from the closed position to the release position in a direction which is substantially at right angles to a plane intersecting edges of the part cylindrical surfaces.

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